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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,774	10/15/2003	Shun Kurata	4041J-000767	6328

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EXAMINER

ALI, MOHAMMAD M

ART UNIT	PAPER NUMBER
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3744

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/685,774

Applicant(s)

KURATA ET AL.

Examiner

Mohammad Ali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Objections

Claim 1 is objected to because of the following informalities: The phrase, "heat-changing" at the end of line 25 and at the beginning of line 26 should be changed to – "heat-exchanging"--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al. (JP2001130245) in view of Izawa et al., (6,516,628). Takano et al, disclose an air conditioner for a vehicle comprising a front air conditioning unit 3 and a rear air conditioning unit 4 for air conditioning front and rear side of a passenger compartment of a vehicle; a compressor 10 for compressing refrigerant; a condenser 14 for condensing gas refrigerant discharged from the compressor 10 in a cooling mode; a front evaporator 18 disposed in the front air conditioning unit 3, for cooling air in the

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cooling mode and for heating air in a heating mode; a rear evaporator 33 disposed in the rear air conditioning unit 4 for cooling air in the cooling mode; a hot gas bypass passage H through which the gas refrigerant discharged from the compressor 10 flows into the front evaporator 18 while bypassing the condenser 14 in the heating mode; a decompression unit 16, disposed between the condenser 14 and the front evaporator 18, for decompressing refrigerant flowing from the condenser in the cooling mode; and a refrigerant pipe 20 to which a refrigerant outlet side of the decompression unit 16 and a refrigerant outlet side of the hot gas bypass passage H are joined, wherein the refrigerant pipe has a refrigerant outlet that is connected to a refrigerant inlet of the front evaporator 18, an accumulator /low-pressure gas-liquid separator 19 and a check valve 35 between rear evaporator 33 and the accumulator 19 to prevent refrigerant backing from the accumulator towards evaporator 33. Takano et al., disclose the invention substantially as claimed as stated above. (See Fig. 2 and the translation of the detailed description). However Takano et al., do not disclose first and second heat exchanger and a gas liquid separator disposed between the first and second heat exchanger. Izawa et al., teach the use of a condenser 20 comprising of a first heat exchanger 21 and a second heat exchanger 22 and a high pressure gas liquid separator 23 in a vehicle air conditioning unit for the purpose of separating refrigerant from the first heat-exchanging unit into gas refrigerant and liquid refrigerant, and for introducing separated gas refrigerant into the second heat-exchanging unit, condensing gas refrigerant by the second heat-exchanging unit and to control super-heating degree of refrigerant at a refrigerant outlet by the first heat-exchanger. See Fig 2 and claim 3. Therefore, it would

have been obvious to one having ordinary skill in the art at the time the invention was made to modify the air conditioner of Takano et al., in view of Izawa et al., such that a first and second heat-exchanger and the gas liquid separator could be provided in order to separate refrigerant from the first heat-exchanging unit into gas refrigerant and liquid refrigerant, and for introducing separated gas refrigerant into the second heat-exchanging unit, condensing gas refrigerant by the second heat-exchanging unit and to control super-heating degree of refrigerant at a refrigerant outlet by the first heat-exchanger.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al., in view of Izawa et al., as applied to claim 1 and further in view of Inoue (5,044,169). Takano et al., in view of Izawa et al., disclose the invention substantially as claimed as stated above. However, Takano et al., in view of Izawa et al., do not explicitly disclose a fixed throttle. Inoue explicitly teaches that a fixed throttle 6 can be used in between a condenser 2 and an evaporator 5 in a refrigeration circuit for the purpose of decompressing the refrigerant (see Fig. 2). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the air conditioner of Takano et al., in view of Izawa et al., and further in view of Inoue such that a fixed throttle could be provided in order to decompress the refrigerant in a refrigeration circuit.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al., in view of Izawa et al., as applied to claim 4 above and further in view of Schnelle et al., (4,611,374). Takano et al., in view of Izawa et al., disclose the invention

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substantially as claimed as stated above. However, Takano et al., in view of Izawa et al., do not explicitly disclose a check valve with a reduced passage pipe wall. Schnelle et al., explicitly teach that a reduced pipe area 12 with a check valve 30 in a tube 10 for the purpose of having a unidirectional fluid flow in fluid circuit. (See Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the air conditioner of Takano et al., in view of Izawa et al., and further in view of Schnelle et al., such that a check valve with reduced pipe area could be provided in order to have a unidirectional fluid flow in a fluid circuit.

Response to Arguments

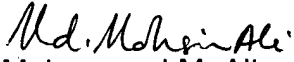
Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad Ali whose telephone number is 703-308-5032. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Esquivel Denise can be reached on 703-308-2597. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mohammad M. Ali
January 6, 2005